

# Matrix™ Tower

## For 75% Organic Recovery from Electrolyte without Air Injection

### FLOW DIAGRAM



*Increase your copper solvent extraction efficiency while lowering cost. Consider SpinTek!*

The SpinTek Matrix™ tower is specifically designed to provide excellent organic recovery of up to 75% from the electrolyte stream without air injection. The organic is recovered in a concentrated form and is automatically discharged from the Matrix™ to an organic recovery tank. This is a pressurized system which eliminates the need for repumping electrolyte.

The Matrix™ also greatly reduces SX filter backwash water by as much as 70% by dramatically extending SX filter run lengths.

The Matrix™ systems are free standing, self-contained units available in a variety of standard sizes with individual unit flow rates of up to 3,300 gpm (750 M3/hr). Multiple units can provide for much higher flow rates. All vessels, media, piping, instruments and controls are provided for a completely automatic and operational system.

### Controls and Instruments

The Matrix™ works automatically without the need for a controller. The electrolyte enters the top of the

vessel, moves through the plates, the recovered organic moves to the top of the vessel and the electrolyte exits at the bottom of the vessel. The only moving part of the system is the organic recovery valve that opens and closes when a preset level of recovered organic is being discharged from the unit.

Standard instrumentation includes two stainless steel pressure gauges with seals. An organic recovery switch of 316L SS is also standard.

### Piping and Valves

Manual isolation valves for the Matrix™ are 316L SS butterfly. The organic recovery valve is a 316 SS butterfly with an air operator. Two 316 SS sample valves are included for monitoring the system's performance and a 316 SS safety pressure relief valve provides system protection.

Piping is manufactured of 316 SS or HDPE fusion welded and can be heat traced to prevent crystallization.

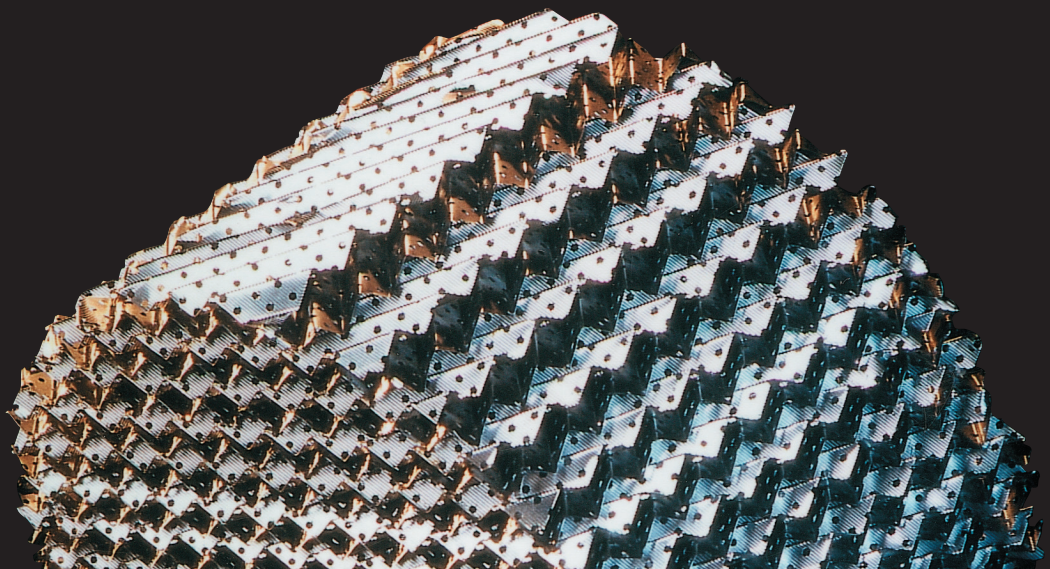
### Matrix Plates

The matrix plates are fabricated of PVC and perform excellent coalescing and recovery of the organic. There are no moving parts in the

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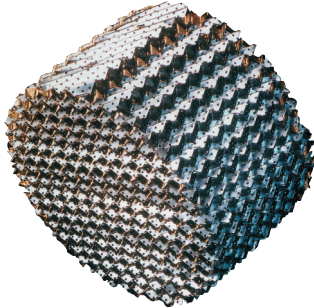
### KEY BENEFITS

- Easily recovered organic
- Increased run lengths of SX filters
- Single unit flow rates to 3,300 gpm (750 m<sup>3</sup>/hr)
- Up to 75% organic removal
- No need for air to coalesce organic
- Reduced backwash volume from SX filters
- No need to repressurize electrolyte



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Matrix plates

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Matrix™ and it does not require the introduction of air for coalescing.

### Pressure Vessels and Skid

The Matrix™ pressure vessels are constructed of 316L SS, built to the stringent ASME and NB requirements and stamped. Normal pressure vessel rating is 50 psig with higher ratings available.

Manways and tank supports are standard and are also constructed of 316L SS. All vessel connections are standard ANSI flanges.

The Matrix™ system is mounted on a carbon steel skid that has been blasted to SSCP-10 and coated with both epoxy and polyurethane for extra corrosion protection.

### Vessel Internals

Vessel internals for inlet flow and service outlet are all constructed of 316L SS.

### Custom Features

The Matrix™ system can be built to a wide variety of specifications. Typical options include alternate piping and vessel materials, such as Hastelloy, specific welding specifications and many others, to meet the demanding requirements of clients and specifying engineering firms.

Please contact SpinTek direct for more information on how the Matrix™ can be designed to meet any special requirements.

## SPECIFICATIONS FOR MATRIX™ TOWERS

### English

Model Number	Service Flow	Piping Size	Vessel Diameter	Height	Dimensions		Weight (lbs)	
					Depth	Width	Shipping	Operating
MT-1010	500 GPM	6"	5'	13'	7'	7'	7,990	15,650
MT-1020	700 GPM	6"	6'	14'	8'	8'	11,055	21,817
MT-1030	950 GPM	6"	7'	14'	9'	9'	15,695	30,980
MT-1040	1,250 GPM	8"	8'	15'	10'	10'	20,800	41,190
MT-1050	1,600 GPM	8"	9'	16'	11'	11'	25,920	52,050
MT-1060	2,000 GPM	8"	10'	16'	12'	12'	33,500	68,030
MT-1070	2,400 GPM	10"	11'	17'	13'	13'	41,900	83,128
MT-1080	2,800 GPM	10"	12'	18'	14'	14'	51,200	103,460
MT-1090	3,300 GPM	12"	13'	19'	15'	15'	63,100	125,109

### Metric

Model Number	Service Flow	Piping Size	Vessel Diameter	Height	Dimensions		Weight (kg)	
					Depth	Width	Shipping	Operating
MT-1010	114 M3/HR	152 mm	1.52 M	3.96 M	2.13 M	2.13 M	3,624	7,099
MT-1020	159 M3/HR	152 mm	1.83 M	4.27 M	2.44 M	2.44 M	5,015	9,896
MT-1030	216 M3/HR	152 mm	2.13 M	4.27 M	2.74 M	2.74 M	7,119	14,052
MT-1040	284 M3/HR	203 mm	2.44 M	4.57 M	3.05 M	3.05 M	9,435	18,684
MT-1050	364 M3/HR	203 mm	2.74 M	4.88 M	3.35 M	3.35 M	11,757	23,610
MT-1060	455 M3/HR	203 mm	3.05 M	4.88 M	3.66 M	3.66 M	15,196	30,858
MT-1070	545 M3/HR	254 mm	3.35 M	5.18 M	3.96 M	3.96 M	19,006	37,707
MT-1080	636 M3/HR	254 mm	3.66 M	5.49 M	4.27 M	4.27 M	23,224	46,929
MT-1090	750 M3/HR	305 mm	3.96 M	5.79 M	4.57 M	4.57 M	28,616	56,739

**Air for Valves:** Dry, filtered, oil-free instrument air at 80 psig (80 5.5 bar)

**Electrical:** 120 volts VAC, single phase, 60 hertz for controller

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 **SpinTek** filtration  
Advancing the flow of industry